

## CLAIMS

What is claim is:

1. A method for forming a sacrificial oxide layer, said method  
5 comprising:

providing a substrate having isolation regions therein; and

forming a sacrificial oxide layer over said substrate by an in situ  
steam generated process comprising introducing oxygen and hydroxyl.

10 2. The method according to claim 1, wherein said substrate  
comprises a silicon substrate.

3. The method according to claim 1, wherein said isolation region  
comprises a shallow trench isolation.

15 4. The method according to claim 1, wherein said in situ steam  
generated process is performed in a rapid thermal processing chamber.

20 5. The method according to claim 1, wherein said in situ steam  
generated process is performed at a temperature of from about 700°C to  
about 1200°C.

25 6. The method according to claim 1, wherein the flow rate of  
oxygen is from about 1 sccm to about 30 sccm.

7. The method according to claim 1, wherein the flow rate of  
hydrogen is from about 0.1 sccm to about 15 sccm.

8. The method according to claim 4, wherein said rapid thermal processing chamber comprises a single wafer chamber.

9. A method for forming a sacrificial oxide layer, said method comprising:

providing a substrate having isolation regions therein; and  
forming a sacrificial oxide layer over said substrate by an in situ steam generated process comprising introducing oxygen and hydroxyl performed at a temperature of from about 700°C to about 1200°C.

10. The method according to claim 9, wherein said substrate comprises a silicon substrate.

11. The method according to claim 9, wherein said isolation region comprises a shallow trench isolation.

12. The method according to claim 9, wherein said in situ steam generated process is performed in a rapid thermal processing chamber.

13. The method according to claim 9, wherein the flow rate of oxygen is from about 1 sccm to about 30 sccm.

14. The method according to claim 9, wherein the flow rate of hydrogen is from about 0.1 sccm to about 15 sccm.

15. The method according to claim 12, wherein said rapid thermal processing chamber comprises a single wafer chamber.

16. A method for forming a sacrificial oxide layer, said method comprising:

providing a substrate having isolation regions therein; and

forming a sacrificial oxide layer over said substrate by an in situ  
5 steam generated process comprising introducing oxygen and hydroxyl  
performed in a rapid thermal processing chamber at a temperature of  
from about 700°C to about 1200°C.

17. The method according to claim 16, wherein the flow rate of  
10 oxygen is from about 1 sccm to about 30 sccm.

18. The method according to claim 16, wherein the flow rate of  
hydrogen is from about 0.1 sccm to about 15 sccm.